



Maintenance Kit Manual

AX-201

PHILIPS

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Document	Maintenance Kit Manual AX-201
Based on	-
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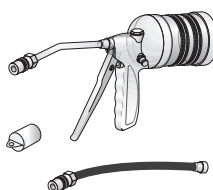
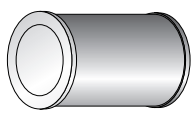

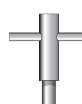


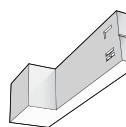




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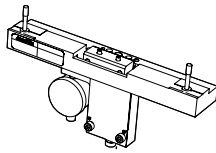

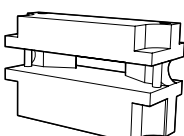


1.1 Material safety data sheets (MSDS) 9

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1.0.1 Maintenance kit (PA 2440/00)

Description	Ordering code	Amount	Used for	
Lubricating kit				
Grease gun	5322-395-10615	1	-	
Flexible hose	9498-396-02040	1	-	
Protection cap	-	1	-	
(Kluber) Isoflex Topas NCA52	5322-390-10151	1	Grease for XY robot bearings	
Lithium based grease NSK 1	5322-390-20159	1	Transport spindles, guides	
Anti score EP lube 3 grease	9498-396-00143	1	Placement head HA Z-motor, guide	
Optical kit				
Camel hair brush, optical tissues	9498-396-00043	1		
Miscellaneous				
Dust catch filter tool	5322-395-10774	1	Replacement tool for filters in placement head HA nozzles	
Board dismantling tool	5322-395-10282	1	Remove controller boards from control supply unit	
Filter element 0.3	9498-396-00062	2	Pneumatic air supply	
Filter (fan)	9498-396-01724	6	Air filter controllers	
Calibre Z-lift	9498-396-01905	1	Z-lift placement heads DV, adjustment	
Tie-wraps 15 cm	-	100	Fixation cables heads	
Tie-wraps 10 cm	-	100	Fixation cables heads	
Flatcable bracket (Large)	-	5	Placement head DV and Z-lift	
Loctite 243	-	1	All screws above Z=0 level unless otherwise defined	
Fuse puller	9498-396-02119	1	Pull fuses from boards	
PU HOSE 4	-	1 mtr	Manifold from AQ to AX-201	

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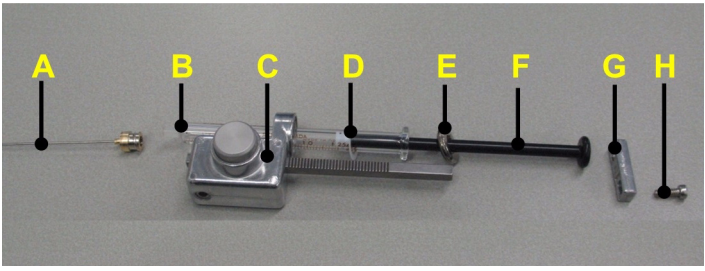

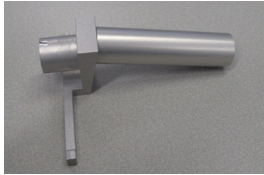
Description	Ordering code	Amount	Used for	
Encoder tool	9498-396-02059	1	Adjustment of encoders on Y-axes	
Plastic distance plate	9498-396-02075	1	X encoder adjustment	
Linear scale mounting tool on X-axis	9498-396-02024	1	-	
Linear scale mounting tool on Y-axes	9498-396-02026	1	-	
Assortment box				
Dust catch filter	5322-480-10169	1	Nozzle placement head HA	
Carbon brushes	9498-396-01388	16	Motors placement head HA	
Fuse slow F5x20 2 A	9498-396-00492	20	All boards	
Fuse slow F5x20 4 A	9498-396-00263	20	All boards	
Screw M1.8X4	5322-502-14433	20	Nozzle	
Screw M2.5X 8	9498-396-00250	10	Sensor Z-lift	
Screw M3X5	9498-396-00390	20	Placement head DV on interface bracket	
Screw M3X6	9498-396-00474	20	Encoder on X-axis	
Screw M3X8	9498-396-00475	20	Manifolds	
Screw M3X16	9498-396-00476	20	Encoder on Y-axes, power supply	
Screw M4X6	9498-396-01882	20	Controllers placement head DV Bracket pneumatic controller	
Screw M4X8	9498-396-01883	10	Clamps, pneumatic controller, fans Y-axis	
Screw M4X10	9498-396-01884	20	Bracket pneumatic controller Z-lift placement heads DV	
Screw M4X12	5322-502-14434	20	Interface placement head HA, bottom	
Screw M4X16	9498-396-01885	10	X-sensor	
Screw M4X20	9498-396-00584	20	Interface placement head HA, top	
Screw M4X25	9498-396-01886	10	BA camera	
Hex lock nut M4	9499-396-00665	10	Fans Y-axis	
Washer 3.2X7	9498-396-00699	20	All M3 screws placement head DV, manifold	
Curved spring washer M3	9498-396-00769	20	All M3 screws	
Curved spring washer M4	9498-396-00903	20	All M4 screws used in X-carriage	

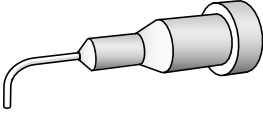
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Description	Ordering code	Amount	Used for	
Washer PF 3.2X7	9498-396-00951	20	Protection boards, manifold, DV controllers	
Washer 4.3X9	9498-396-00904	20	All M4 screws placement head DV on bracket	
Washer PF-CP M2,5	9498-396-01068	20	Manifold placement head HA	
Earth washer STL ST 4.3X8	9498-396-01069	10	Fans, brackets	
Earth washer STL ST 5.3X10	9498-396-01082	10	Hood, side plate	
Earth washer STL ST 6.4X14	9498-396-01188	10	Earth to covers	
O-ring placement head HA	5322-530-10386	10	Nozzle interface	
O-ring 2.3 x 0.9	5322-530-51243	10	Behind pressure sensor on manifold HA Pneumatic controller interface	
Sealing plate	5322-466-12073	10	For nozzles placement head HA	
Fixing eye of tie-wrap	9498-396-01394	10	Cables in control supply unit	
Hose pillar RTU-PK-3/3	9498-396-01881	6	Manifold from AQ to AX-201	
Contact pen	9498-396-00125	5	Trolley to lift electrical interface	
PCB spacer RLCBSRE-10	9498-396-01887	10	Placement head HA, transport controller in control supply	
Cable clamp	9498-396-01888	10	Base	
Cable clamp 4.8	9498-396-01889	10	Encoder cable, BA camera	
Flatcable bracket (Small)	-	5	Control supply unit	
End stop Z-lift DOWN	9498-396-01892	4	Z-lift placement head DV	
End stop Z-lift UP	9498-396-01893	8	Z-lift Placement head DV	

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1.0.2 Lubricating tool for placement head DV and Z-lift

A	Needle (set of 6)	9498 396 01998		
B	Container	9498 396 02000		
F	Plunger			
C	Dispenser	9498 396 01999		
D	Nylon ring			
E	Flange screw			
G	Plunger arm			
H	Screw			
Grease (IKO)		9498 396 02001		
Needle guidance		9498 396 01996		

Bended needle	9498-396-02438	

1.1 Material safety data sheets (MSDS)

For reason of environmental awareness, there is a growing demand for information on the ingredients of the maintenance materials (cleaning agents, lubricants etc.).

The relevant material safety data sheets (MSDS) are enclosed in this section.

Overview of used cleaning materials, lubricants etc.:

Code number	Supplier	Trade name	General description	MSDS no.
1311 504 84102	LOCTITE	LOCTITE 243, 50ml	SEALING AND LOCKING AGENT	08273
5322 390 10151	PHILIPS	ISOFLEX TOPAS NCA 52	BALL AND PLAIN BEARING GREASE	08189
9498 396 00143	PHILIPS	CMD ANTI-SCORING EP LUBE 3	LITHIUM GREASE	01583
5322 390 20159	PHILIPS	NSK GREASE NO. 1 (LR3)	GREASE	10138
1322 530 68801	PHILIPS	ETHANOL	ETHANOL, DENATURATED	00397
1322 526 41801	PHILIPS	MOLYKOTE	METAL PROTECTOR	12803
1303 500 42001	PHILIPS	MOLYKOTE DX	GREASE	14960
1322 534 33801	RHENUS	RHENUS NORLITH STM 2	BALL BEARING GREASE	24515

Figure 1 Maintenance materials

On the following pages the concerned MSDS sheets.

MATERIAL SAFETY DATA SHEET

According EC 91/155

1. Identification of the substance/preparation

MSDS : 01583
 Code number : 5322 390 20157
 Supplier : PHILIPS CONSUMER SERVICE
 Tradename : CMD ANTI-SCORING EP LUBE 3
 General description : LITHUIM GREASE
 Emergency phonenumber +31 40 2755555

2. Composition/information on ingredients

Component	CAS-number	Percentage	EC-label
1 PETROLEUM HYDROCARBON	64741-95-3	59.0%	
2 PETROLEUM WAX	63231-60-7	14.0%	
3 RESIN ESTER	65997-13-9	5.0%	
4 POLYOXY ETHYLENE DINONYL PHENYL ETHER PHOSPHATE	39464-64-7	22.0%	

3. Hazards identification

- Product contains components that are on the black list surface water.

4. First-aid measures

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
 Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
 Inhalation : Not applicable.
 Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.
 Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, foam, extinguishing powder, water spray.
 Hazardous decomposition products in fire : phosphorus oxide, phosphine, carbon monoxide, nitrous oxides.

6. Accidental release measures

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Procedure by spillage : Dependent on quantity spilt paste, one has the choice between: - remove with cleaning rag or paper, or - cover paste with Powersorb, sand, diatomite, vermiculite and suchlike. Shovel the material into plastic bag or other suitable packaging and remove to the central depot for hazardous waste.

7. Handling and storage

Local exhausting : Under normal circumstances not applicable.

Storage conditions : Keep packing closed.

Do not store product close to ignition or heat sources.

8. Exposure controls/personal protection

Exposure limits (20 Cel. and 1013 mbar) :

TLV : 5 mg/m³ PETROLEUM HYDROCARBON (as oil aerosol)

Remarks exposure limits :

none

Odeur threshold (20 Cel. and 1013 mbar) :

not tracable

Advised personal protection

skin : butyl rubber gloves.

eyes : safety goggles.

inhalation : none (when used normally).

9. Physical and chemical properties

Physical state	: paste
Colour	: type dependent
Odour	: specific
Boiling point/range (Cel.)	: 119
Melting point/range (Cel.)	: 54
Flash point/range (Cel.)	: 229
Explosive limits	: LEL: 0.9 vol.% UEL: 7.0 vol.%
Dust explosions possible in air	: not applicable
Density at 20 Cel.	: 951 kg/m ³
Vapour pressure in kPa	: 0,04 (93 Cel)
Solubility in water	: none
pH	: not applicable
Viscosity	: > 150 mPa.s
Autoignition temperature (Cel.)	: > 300
Electrostatic chargement	: no
Log Po/w :	: 3,9-6 PETROLEUM HYDROCARBON > 6 PETROLEUM WAX

10. Stability and reactivity

Conditions to avoid	: none
Reaction with water	: no
Hazardous reactions with	: strong oxidizers.
Hazardous decomposition products at heating	: phosphor compounds.

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11. Toxicological information

Symptoms

Skin local : With intensive skin contact risk of skin affection.
 general : No absorption worth mentioning under normal working conditions.

Ingestion local : The substance is prickling: abdominal pain, nausea.
 No symptoms under normal working conditions.
 general : No absorption worth mentioning under normal working conditions.

Inhalation local : The substance is with atomising prickling: coughing.
 general : No absorption worth mentioning under normal working conditions.

Eyes local : The substance is prickling: redness, pain.

Remarks symptoms : None

Toxicity : LD-50 unknown

12. Ecotoxicological information

Biochemical oxygen demand : not traceable
 Chemical oxygen demand : not traceable
 Ecotoxicity : LC-50: > 1000 mg/l/96h (Fish) PETROLEUM
 HYDROCARBON
 EC-50: > 1000 mg/l/48h (Daphnia) PETROLEUM
 HYDROCARBON

Remarks on ecotoxicity : none

13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation. Consider also return delivery to supplier.

14. Transport information

Class/figure RID/ADR : none
 Class IMO : none
 Class ICAO : none
 UN-number : none

15. Regulatory information

not applicable

Remarks on EC-labeling : The supplier does not give an EC-label (Userlabel).

16. Other information

Remarks on MSDS : none
 Inner company references : none
 Date last update : 1998-12-02
 Date last update but one : 1997-04-07

The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

MATERIAL SAFETY DATA SHEET

According EC 91/155

1. Identification of the substance/preparation

MSDS : 08189
 Code number : 5322 390 10151
 Supplier : PHILIPS CONSUMER SERVICE
 Tradename : ISOFLEX TOPAS NCA 52
 General description : BALL AND PLAIN BEARING GREASE
 Emergency phonenumber +31 40 2755555

2. Composition/information on ingredients

Component	CAS-number	Percentage	EC-label
1 SYNTHETIC HYDROCARBONS OIL			
2 CALCIUM SOAP			

3. Hazards identification

4. First-aid measures

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
 Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
 Inhalation : Not applicable.
 Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.
 Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray.
 Hazardous decomposition products in fire : carbon monoxide, calcium oxide.

6. Accidental release measures

Procedure by spillage : Dependent on quantity spilt paste, one has the choice between: - remove with cleaning rag or paper, or - cover paste with Powersorb, sand, diatomite, vermiculite and suchlike. Shovel the material into plastic bag or other suitable packaging and remove to the central depot for hazardous waste.

7. Handling and storage

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Local exhausting : Under normal circumstances not applicable.
Storage conditions : Store product at room temperature.

8. Exposure controls/personal protection

Exposure limits (20 Cel. and 1013 mbar) :
not determined

Remarks exposure limits :
none

Odeur threshold (20 Cel. and 1013 mbar) :
not tracable

Advised personal protection
skin : polyvinyl alcohol gloves.
eyes : safety goggles.
inhalation : none (when used normally).

9. Physical and chemical properties

Physical state : paste
Colour : beige
Odour : specific
Boiling point/range (Cel.) : not tracable
Melting point/range (Cel.) : ≥ 180
Flash point/range (Cel.) : ≥ 200
Explosive limits : not tracable
Dust explosions possible in air : not applicable
Density at 20 Cel. : 850 - 890 kg/m³
Vapour pressure in kPa : not tracable
Solubility in water : none
pH : not applicable
Viscosity : not tracable
Autoignition temperature (Cel.) : not tracable
Electrostatic chargement : no
Log Po/w : not tracable

10. Stability and reactivity

Conditions to avoid : none
Reaction with water : no
Hazardous reactions with : strong oxidizers.
Hazardous decomposition products at heating : none.

11. Toxicological information

Symptoms

Skin local : With intensive skin contact risk of skin affection.
general : Not applicable.
Ingestion local : The substance is prickling: abdominal pain.
general : Not applicable.
Inhalation local : Not applicable.

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general : Not applicable.
 Eyes local : The substance is prickling: redness.
 Remarks symptoms : None
 Toxicity : LD-50 unknown

12. Ecotoxicological information

Biochemical oxygen demand : not tracable
 Chemical oxygen demand : not tracable
 Ecotoxicity : none
 Remarks on ecotoxicity : none

13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation. Consider also return delivery to supplier.

14. Transport information

Class/figure RID/ADR : none
 Class IMO : none
 Class ICAO : none
 UN-number : none

15. Regulatory information

not applicable
 Remarks on EC-labeling : none

16. Other information

Remarks on MSDS : none
 Inner company references : none
 Date last update : 1999-07-07
 Date last update but one : 1994-08-03

The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

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MATERIAL SAFETY DATA SHEET

According EC 91/155

1. Identification of the substance/preparation

MSDS : 08273
Code number : 1311 504 84102
Supplier : LOCTITE
Tradename : LOCTITE 243, 50 ML
General description : SEALING AND LOCKING AGENT
Emergency phonenumber +31 40 2755555

2. Composition/information on ingredients

Component	CAS-number	Percentage	EC-label
1 POLYETHYLENE GLYCOL DIMETHACRYLATE		30.0- 60.0%	
2 ORGANIC PEROXIDE (CORROSIVE)		1.0-5.0%	O,C; R: 7- 20/22-34
3 PLASTICIZER		10.0- 30.0%	

3. Hazards identification**4. First-aid measures**

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
Inhalation : Bring the victim into the fresh air as soon as possible, let rest and if necessary call for a doctor.
Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.

Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray.
Hazardous decomposition products in fire : carbon monoxide.

6. Accidental release measures

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Procedure by spillage : Absorb the liquid in appropriate absorbent (e.g. Powersorb, dry sand, diatomite, vermiculite etc.), shovel the mixture into plastic bags and remove to the central depot for hazardous waste.

7. Handling and storage

Local exhausting : Under normal circumstances not applicable.

Storage conditions : Store product at a temperature between 8 and 21 degrees Celsius.

8. Exposure controls/personal protection

Exposure limits (20 Cel. and 1013 mbar) :
not determined

Remarks exposure limits :
none

Odeur threshold (20 Cel. and 1013 mbar) :
not tracable

Advised personal protection
skin : butyl rubber gloves.
eyes : safety goggles.
inhalation : none (when used normally).

9. Physical and chemical properties

Physical state	: liquid
Colour	: blue
Odour	: specific
Boiling point/range (Cel.)	: not tracable
Melting point/range (Cel.)	: not tracable
Flash point/range (Cel.)	: >=100
Explosive limits	: not tracable
Dust explosions possible in air	: not applicable
Density at 20 Cel.	: 1080 kg/m3
Vapour pressure in kPa	: <0,01 (25 Cel.)
Solubility in water	: none
pH	: not applicable
Viscosity	: not tracable
Autoignition temperature (Cel.)	: not tracable
Electrostatic chargement	: not tracable
Log Po/w :	: not tracable

10. Stability and reactivity

Conditions to avoid	: none
Reaction with water	: no
Hazardous reactions with	: peroxides.
Hazardous decomposition products at heating	: none.

11. Toxicological information

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Symptoms

Skin local : May cause allergic reaction: chance of allergic dermatitis.
With intensive skin contact risk of skin affection.

general : Probably no absorption worth mentioning.

Ingestion local : Produces probably no symptoms.

general : Produces probably no symptoms.

Inhalation local : Produces probably no symptoms.

general : Produces probably no symptoms.

Eyes local : The substance is prickling: redness.

Remarks symptoms : None

Toxicity : LD-50: > 5 g/kg (ORL-RAT), TOTAL PRODUCT

12. Ecotoxicological information

Biochemical oxygen demand : not traceable

Chemical oxygen demand : not traceable

Ecotoxicity : none

Remarks on ecotoxicity : none

13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation. Consider also return delivery to supplier.

14. Transport information

Class/figure RID/ADR : none

Class IMO : none

Class ICAO : none

UN-number : none

15. Regulatory information

not applicable

Remarks on EC-labeling : none

16. Other information

Remarks on MSDS : none

Inner company references : BXV 11-49

Date last update : 1999-12-01

Date last update but one : 1997-08-01

The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

MATERIAL SAFETY DATA SHEET

According EC 91/155

1. Identification of the substance/preparation

MSDS : 10138
 Code number : 5322 390 20159
 Supplier : PHILIPS CONSUMER SERVICE
 Tradename : NSK GREASE NO.1
 General description : GREASE

Emergency phonenumber +31 40 2755555

2. Composition/information on ingredients

	Component	CAS-number	Percentage	EC-label
1	SYNTHETIC OIL		73.0-78.0%	
2	LITHIUM SOAP		21.0-23.0%	
3	ANTI OXIDANT		1.0-3.0%	
4	INHIBITORS		0.5-1.5%	

3. Hazards identification

4. First-aid measures

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
 Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
 Inhalation : Not applicable.
 Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.

Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray.
 Hazardous decomposition products in fire : carbon monoxide, nitrous oxides.

6. Accidental release measures

Procedure by spillage : Dependent on quantity spilt paste, one has the choice between: - remove with cleaning rag or paper, or - cover paste with Powersorb, sand, diatomite, vermiculite and suchlike. Shovel the material into plastic bag or other suitable packaging and remove to the central depot for hazardous waste.

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7. Handling and storage

Local exhausting : Under normal circumstances not applicable.

Storage conditions : Do not store product close to ignition sources.

8. Exposure controls/personal protection

Exposure limits (20 Cel. and 1013 mbar) :

TLV : 5 mg/m³ SYNTHETIC OIL (as oil aerosol)

Remarks exposure limits :

none

Odeur threshold (20 Cel. and 1013 mbar) :

not traceable

Advised personal protection

skin : butyl rubber gloves.

eyes : safety goggles.

inhalation : none (when used normally).

9. Physical and chemical properties

Physical state	: paste
Colour	: white
Odour	: almost odourless
Boiling point/range (Cel.)	: not applicable
Melting point/range (Cel.)	: see info. section 16 SDS.
Flash point/range (Cel.)	: 225
Explosive limits	: not applicable
Dust explosions possible in air	: not applicable
Density at 20 Cel.	: 920 kg/m ³
Vapour pressure in kPa	: < 0,1
Solubility in water	: none
pH	: not applicable
Viscosity	: > 150 mPa.s
Autoignition temperature (Cel.)	: > 300
Electrostatic charge	: no
Log Po/w :	: not traceable

10. Stability and reactivity

Conditions to avoid	: none
Reaction with water	: no
Hazardous reactions with	: oxidizing substances, strong acids.
Hazardous decomposition products at heating	: none.

11. Toxicological information

Symptoms

Skin local : With intensive skin contact risk of skin affection.
 general : Not applicable.

Ingestion local : No symptoms under normal working conditions.
 general : No absorption worth mentioning under normal working conditions.

Inhalation local : Not applicable.
 general : Not applicable.

Eyes local : The substance is prickling: redness.

Remarks symptoms : None

Toxicity : LD-50 unknown

12. Ecotoxicological information

Biochemical oxygen demand : not traceable
 Chemical oxygen demand : not traceable
 Ecotoxicity : none
 Remarks on ecotoxicity : none

13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation. Consider also return delivery to supplier.

14. Transport information

Class/figure RID/ADR : none
 Class IMO : none
 Class ICAO : none
 UN-number : none

15. Regulatory information

not applicable

Remarks on EC-labeling : The supplier does not give an EC-label (Userlabel).

16. Other information

Remarks on MSDS : At temperatures above 190 degrees Celsius the product becomes soft.
 Inner company references : none
 Date last update : 1998-12-02
 Date last update but one : 1997-03-25

The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

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PHILIPS

MATERIAL SAFETY DATA SHEET

According EC 91/155

1. Identification of the substance/preparation

MSDS : 00397
Product code 12nc : 1322 530 68801
Supplier : CHEMPROHA CHEMIEPARTNER B.V.
 POSTBUS 872
 3300 AW ZWIJNDRECHT
 Netherlands
 Tel: 078-6544944
 Fax: 078-6191399
Tradename : ETHANOL 99,8%, DENATURATED WITH 5% METHANOL 1-24009
General description : ETHANOL, DENATURATED
Use : Miscellaneous
Publicationdate : 2003-03-05
Emergency phonenumber +31 (0)497-598315

2. Composition/information on ingredients

Component	CAS-number	EC-number	Percentage	EC-label
ETHANOL	64-17-5	200-578-6	≥90.0 -≤97.0 %	F;R: 11
METHANOL	67-56-1	200-659-6	≥3.0 -≤10.0 %	F,T;R: 11-23/24/25-39/23/24/25

3. Hazard identification



R-phrases

- Highly flammable.
- Harmful by inhalation, in contact with skin and if swallowed.
- Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.

4. First-aid measures

Skin : Remove contaminated clothes as soon as possible. Remove residue substance as soon as possible (f.i. rinse with much water). In case of a serious exposure call for a doctor.
Ingestion : If victim is conscious let him drink 1 or 2 glasses of water. In case of general disorders bring victim into the hospital, otherwise call for a doctor.
Inhalation : Bring victim into the fresh air as soon as possible and let rest. In case of severe exposure call for a doctor. In case of breathing problems, loose squeezing clothes and if victim is conscious bring victim in high sitting position. In case of stagnation of breathing give IMMEDIATELY oxygen and transport to hospital as soon as possible.
Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.
Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, extinguishing powder, water spray, alcohol resistant foam
Hazardous decomposition products in fire : carbon monoxide

6. Accidental release measures

Spillage procedure : Absorb the liquid in appropriate absorbent (e.g. Powersorb, dry sand, diatomite, vermiculite etc.), shovel the mixture into plastic bags and remove to the central depot for hazardous waste.
Emergency procedure : not applicable

7. Handling and storage

Local exhausting : Depends on processing circumstances, but at least good room ventilation.
Storage conditions : Keep container in a well-ventilated place.
 Keep away from sources of ignition - No smoking.
 Keep packing closed.
 Store product in a cool, dry and well ventilated area.

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8. Exposure controls/personal protection

Exposure limits :

TLV:	1000 mg/m3	ETHANOL
	applicable to: Netherlands (20 °C; 1013 mbar)	
TLV:	1907 mg/m3	ETHANOL
	applicable to: Belgium (20 °C; 1013 mbar)	
TLV:	1900 mg/m3	ETHANOL
	applicable to: Germany (20 °C; 1013 mbar)	
TLV:	1880 mg/m3	ETHANOL
	applicable to: United States (25 °C; 1013 mbar)	
TLV:	266 mg/m3	S METHANOL
STEL:	333 mg/m3	S METHANOL
	applicable to: Belgium (20 °C; 1013 mbar)	
TLV:	260 mg/m3	S METHANOL
STEL:	330 mg/m3	S METHANOL
	applicable to: United States (25 °C; 1013 mbar)	
TLV:	270 mg/m3	S METHANOL
	applicable to: Germany (20 °C; 1013 mbar)	
* TLV:	260 mg/m3	S METHANOL
STEL:	520 mg/m3	S METHANOL
	applicable to: Netherlands (20 °C; 1013 mbar)	

C=Ceiling; S=Skin

Remarks exposure limits :

none

Odour threshold (20°C; 1013 mbar) :

≥96 -≤220.8 mg/m3	ETHANOL
≥5.586 -≤7980 mg/m3	METHANOL

Advised personal protection :

skin	:	butyl rubber gloves
	:	neoprene gloves
eyes	:	safety goggles
inhalation	:	none (when sufficient exhausting)

9. Physical and chemical properties

Physical state	:	liquid
Colour	:	colourless
Odour	:	alcoholic
Vapor rate/range	:	not traceable
Boiling point/range	:	≥65 °C -≤78 °C (1013 mbar)
Melting point/range	:	≥-117 °C -≤-98 °C
Flash point/range	:	≥11 °C -≤12 °C
Explosive limits	:	LEL:≥3.4 vol.% -UEL:≤36.5 vol.%
Dust explosions possible in air	:	not applicable
Relative density	:	≥0.79000 -≤0.81 (water=1) (20 °C)
Vapour pressure	:	12.7 kPa (20 °C)
Solubility in water	:	complete
Solubility in fat	:	not traceable
pH	:	≥5 -≤9
Viscosity	:	1.22 mPa.s (20 °C)
Autoignition temperature	:	≥370 °C -≤455 °C
Decomposition temperature	:	not traceable
Electrostatic chargement	:	not traceable

10. Stability and reactivity

Conditions to avoid	:	none
Reactions with water	:	no
Hazardous reactions with	:	oxidizing substances, alkaline earth metals, alkali metals, alkali oxides
Hazardous decomposition products at heating	:	none

11. Toxicological information

Symptoms

Skin	local	:	The substance is prickling: redness.
	general	:	Degreasing: in case of sustained contact a rough, dry skin, eczema.
Ingestion	local	:	Probably no absorption worth mentioning.
	general	:	The substance is prickling: sore throat.
Inhalation	local	:	No symptoms under normal working conditions.
	general	:	The substance may be absorbed after ingestion.
Eyes	local	:	The substance is intoxicating: headache, drowsiness, dizziness. Large quantities may cause: unconsciousness, agitation.
	general	:	The vapour is prickling: sore throat, coughing.
Remarks symptoms	local	:	The vapour may be absorbed by inhalation.
	general	:	For phenomena, see ingestion general.
	local	:	The substance is prickling: redness, pain.
	general	:	After prolonged exposure possibly effects on: the nervous system.

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Toxicity :

LD-50: 7.06 g/kg (ORL-RAT), ETHANOL
LD-50: >20 g/kg (SKN-RBT), ETHANOL
LC-50: 124.7 mg/l/4H (IHL-RAT), ETHANOL
LD-50: 5.628 g/kg (ORL-RAT), METHANOL
LC-50: 83.8 mg/l/4H (IHL-RAT), METHANOL
LD-50: 15.8 g/kg (SKN-RBT), METHANOL

Source : IUCLID
Source : ChemDat (Merck)
Source : IUCLID
Source : IUCLID
Source : IUCLID
Source : IUCLID

Ames test : not traceable

12. Ecotoxicological information

Biological oxygen demand (5) : 0.97 g/g ETHANOL
0.6 g/g METHANOL
Chemical oxygen demand : 1.70 g/g ETHANOL
1.42 g/g METHANOL
Biological(5)/chemical oxygen demand ratio : 0.57 ETHANOL
0.42 METHANOL
Degradability : easy degradable ETHANOL
easy degradable METHANOL
Biochemical factor : 0.66 ETHANOL
<10 METHANOL
Log Po/w : -0.32 ETHANOL
-0.77 METHANOL
Henry Constant : not traceable

Source : IUCLID
Source : IUCLID
Source : IUCLID
Source : IUCLID
Source : ChemDat (Merck)
Source : ChemDat (Merck)
Source : ChemDat (Merck)
Source : IUCLID
Source : IUCLID
Source : IUCLID

Ecotoxicity :

LC-50: 11000 mg/l/96H (Fish), ETHANOL
EC-50: ≥9268 -≤14221 mg/l/48H (Daphnia), ETHANOL
LC-50: 15400 mg/l/96H (Fish), METHANOL
EC-50: >10000 mg/l/48H (Daphnia), METHANOL

Source : IUCLID
Source : IUCLID
Source : IUCLID
Source : ChemDat (Merck)

Remarks on ecotoxicity : none

13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation. Consider also return delivery to supplier. Uncleaned empty packagings may contain inflammable and/or explosive mixtures.

14. Transport information

ADR/RID **UN-number** : 1170 ETHANOL SOLUTION
Class : 3
Packinggroup : III
Transport emergency card : 30S1170
IMO **UN-number** : 1170 ETHANOL SOLUTION
Class : 3
Packinggroup : III
Marine pollutant : no
IATA/ICAO **UN-number** : 1170 ETHANOL SOLUTION
Class : 3
Packinggroup : III

15. Regulatory information

Hazard symbol
F (HIGHLY FLAMMABLE)
Xn (HARMFUL)
R-phrases
11 Highly flammable.
20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
68/20/21/22 Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed.
S-phrases
9 Keep container in a well-ventilated place.
16 Keep away from sources of ignition - No smoking.
36/37 Wear suitable protective clothing and gloves.
Hazardous component(s) : METHANOL
Remarks on EC-labeling : The supplier may give a different EC-label (Userlabel).

16. Other information

Remarks on MSDS : none
Inner company references : none

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Overview relevant R-sentences from all components in section 2 :

11	Highly flammable.
23/24/25	Toxic by inhalation, in contact with skin and if swallowed.
39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed.

Date last update : 2004-01-19

* Point to alterations with regard to the previous version.

The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

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MATERIAL SAFETY DATA SHEET

According EC 91/155

1. Identification of the substance/preparation

MSDS : 12803
Product code 12nc : 1322 526 41801
Supplier : DOW CORNING
 62, RUE GENERAL DE GAULLE
 1310 TERHULPEN
 Belgium
 Tel: +32-2-655-2523
 Fax: +32-2-655-2002
Tradename : MOLYKOTE METAL PROTECTOR PLUS
General description : WAX SOLUTION
Use : Miscellaneous
Publicationdate : 2003-03-05
Emergency phonenumber +31 (0)497-598315

2. Composition/information on ingredients

Component	CAS-number	EC-number	Percentage	EC-label
STODDARD SOLVENT (C6H6 <0.1%)	8052-41-3	232-489-3		Xn;R: 10-65
WAX				

3. Hazard identification

R-phrases
 • Flammable.

4. First-aid measures

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
Inhalation : Bring the victim into the fresh air as soon as possible, let rest and if necessary call for a doctor.
Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.
Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray
Hazardous decomposition products in fire : carbon monoxide

6. Accidental release measures

Spillage procedure : Absorb the liquid in appropriate absorbent (e.g. Powersorb, dry sand, diatomite, vermiculite etc.), shovel the mixture into plastic bags and remove to the central depot for hazardous waste.
Emergency procedure : not applicable

7. Handling and storage

Local exhausting : Depends on processing circumstances, but at least good room ventilation.
Storage conditions : Store product in a well ventilated area.
 Do not store product close to ignition sources.

8. Exposure controls/personal protection

Exposure limits :
 TLV: 575 mg/m3 STODDARD SOLVENT (C6H6 <0.1%)
 applicable to: Netherlands (20 °C; 1013 mbar)
 TLV: 533 mg/m3 STODDARD SOLVENT (C6H6 <0.1%)
 applicable to: Belgium (20 °C; 1013 mbar)
 TLV: 570 mg/m3 STODDARD SOLVENT (C6H6 <0.1%)
 applicable to: United States (25 °C; 1013 mbar)
 not determined WAX
 C=Ceiling; S=Skin

Remarks exposure limits :
 none

Odour threshold (20°C; 1013 mbar) :
 not traceable

Advised personal protection :
 skin : butyl rubber gloves
 eyes : safety goggles
 inhalation : none (when sufficient exhausting)

9. Physical and chemical properties

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Physical state	: liquid
Colour	: yellow
Odour	: like solvents
Vapor rate/range	: not traceable
Boiling point/range	: The product decomposes before it boils.
Melting point/range	: not traceable
Flash point/range	: 28 °C
Explosive limits	: not traceable
Dust explosions possible in air	: not applicable
Relative density	: 0,81000 (water=1) (20 °C)
Vapour pressure	: not traceable
Solubility in water	: none
Solubility in fat	: not traceable
pH	: not applicable
Viscosity	: not traceable
Autoignition temperature	: not traceable
Decomposition temperature	: >150 °C
Electrostatic chargement	: not traceable

10. Stability and reactivity

Conditions to avoid	: none
Reactions with water	: no
Hazardous reactions with	: strong oxidizers
Hazardous decomposition products at heating	: formaldehyde

11. Toxicological information

Symptoms		
Skin	local	: The substance is prickling: redness.
		: Degreasing: in case of sustained contact a rough, dry skin, eczema.
Ingestion	general	: No absorption worth mentioning under normal working conditions.
	local	: The substance is prickling: abdominal pain, vomiting, diarrhoea, coughing.
		: Chance of pulmonary affections if choked.
		: No symptoms under normal working conditions.
Inhalation	general	: For phenomena, see inhalation general.
		: No absorption worth mentioning under normal working conditions.
	local	: The vapour is prickling: sore throat, coughing, shortness of breath.
	general	: The vapour may be absorbed by inhalation.
Eyes		: The vapour is intoxicating: drowsiness. Large concentrations may cause: restricted awareness.
	local	: The substance is prickling: redness, pain.
		: None
Remarks symptoms		
Toxicity		: LD-50: >5 g/kg (ORL-RAT), STODDARD SOLVENT (C6H6 <0.1%)

12. Ecotoxicological information

Biological oxygen demand (5)	: not traceable
Chemical oxygen demand	: not traceable
Biological/chemical oxygen demand ratio	: not traceable
Biochemical factor	: not traceable
Log Po/w	: not traceable
Ecotoxicity	: not traceable
Remarks on ecotoxicity	: none

13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation. Consider also return delivery to supplier. Uncleaned empty packagings may contain inflammable and/or explosive mixtures.

14. Transport information

* ADR/RID	UN-number	: 1993 FLAMMABLE LIQUID, N.O.S. (STODDARD SOLVENT (C6H6 <0.1%))
	Class	: 3
	Packinggroup	: III
	Transport emergency card	: 30GF1-III
* IMO	UN-number	: 1993 FLAMMABLE LIQUID, N.O.S. (STODDARD SOLVENT (C6H6 <0.1%))
	Class	: 3
	Packinggroup	: III
	Marine pollutant	: no
* IATA/CAO	UN-number	: 1993 FLAMMABLE LIQUID, N.O.S. (STODDARD SOLVENT (C6H6 <0.1%))
	Class	: 3
	Packinggroup	: III

15. Regulatory information

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Hazard symbol	none
R-phrases	10
S-phrases	23.2 24 43.13 62
Hazardous component(s)	: not applicable
Remarks on EC-labeling	: The supplier may give a different EC-label (Userlabel).

16. Other information

Remarks on MSDS	: none
Inner company references	: none

Overview relevant R-sentences from all components in section 2 :

10	Flammable.
65	Harmful: may cause lung damage if swallowed.

Date last update	: 2003-03-05
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* Point to alterations with regard to the previous version.
The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of at the date of its printing.

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**PHILIPS****MATERIAL SAFETY DATA SHEET**

According EC 91/155

1. Identification of the substance/preparation

MSDS : 14960
Product code 12nc : 1303 500 42001
Supplier : DOW CORNING
 62, RUE GENERAL DE GAULLE
 1310 TERHULPEN
 Belgium
 Tel: +32-2-655-2523
 Fax: +32-2-655-2002
Tradename : MOLYKOTE DX
General description : LUBRICATING PASTE
Use : Various
Publicationdate : 2001-01-05
General information : dangerous.goods@philips.com
Emergency phonenumber : +31 (0)497-598315

2. Hazard identification*** R-phrases**

- Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition/information on ingredients

Component	CAS-no	EC-no	Catalogue-no	Percentage(%)	EC-label
* DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)	64742-52-5	265-155-0	649-465-00-7	23.0	Xn;R: 65
* DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	64741-96-4	265-097-6	649-457-00-3	17.0	Xn;R: 65
* DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)	64742-54-7	265-157-1	649-467-00-8	6.0	Xn;R: 65
* DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	64742-65-0	265-169-7	649-474-00-6	6.0	Xn;R: 65
* DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	64741-88-4	265-090-8	649-454-00-7	6.0	Xn;R: 65
ZINC OXIDE	1314-13-2	215-222-5	030-013-00-7	2.0	N;R: 50/53
* N-ALKYL (C16-C18) TRIMETHYLENEDIAMINE	68153-99-1	268-902-9		3.0	C;R: 22 34

4. First-aid measures

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
Inhalation : Not applicable.
Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.
Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray
Unsuitable fire-extinguisher : not traceable
Special fire-fighting equipment : In the event of fire, wear protective clothing and use breathing apparatus that is independent of the ambient air.
*** Hazardous decomposition products in fire** : carbon monoxide, nitrous oxides, zinc oxide

6. Accidental release measures

Spillage procedure : Dependent on quantity spilt paste, one has the choice between: - remove with cleaning rag or paper, or - cover paste with Powersorb, sand, diatomite, vermiculite and suchlike. Shovel the material into plastic bag or other suitable packaging and remove to the central depot for hazardous waste.
Emergency procedure : not applicable

7. Handling and storage

Local exhausting : Under normal circumstances not applicable.
Storage conditions : Store product in a well ventilated area, dry.
Storage code (on behalf of PGS 15) : none

8. Exposure controls/personal protection

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Exposure limits :

applicable to: The Netherlands (20 °C; 1013 mbar)

TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)(as oil aerosol)	(Statutory threshold limit value)
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)(as oil aerosol)	(Statutory threshold limit value)
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	(Statutory threshold limit value)
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	(Statutory threshold limit value)
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	(Statutory threshold limit value)
TWA(8 hours):	5 mg/m3	ZINC OXIDE(as fume)	
No TWA has been laid down.		N-ALKYL (C16-C18) TRIMETHYLENEDIAMINE	

applicable to: Belgium (20 °C; 1013 mbar)

TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)(as oil aerosol)	
TWA(15 minutes):	10 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)(as oil aerosol)	
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)(as oil aerosol)	
TWA(15 minutes):	10 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)(as oil aerosol)	
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	
TWA(15 minutes):	10 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	
TWA(15 minutes):	10 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	
TWA(8 hours):	5 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	
TWA(15 minutes):	10 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)(as oil aerosol)	
TWA(8 hours):	5 mg/m3	ZINC OXIDE(as fume)	
TWA(15 minutes):	10 mg/m3	ZINC OXIDE(as fume)	
TWA(8 hours):	10 mg/m3	ZINC OXIDE(as dust)	

applicable to: Germany (20 °C; 1013 mbar)

TWA(8 hours):	500 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)(carbonhydrogen mix, group 2)	
TWA(8 hours):	1000 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)(carbonhydrogen mix, group 1)	
TWA(8 hours):	1000 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)(carbonhydrogen mix, group 1)	
TWA(8 hours):	1000 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)(carbonhydrogen mix, group 1)	
TWA(8 hours):	1000 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)(carbonhydrogen mix, group 1)	

applicable to: United States of America (25 °C; 1013 mbar)

TWA(8 hours):	0.2 mg/m3	DISTILLATES (PETROLEUM),	
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TWA(8 hours):	0.2 mg/m3	HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)(as mineral oil, inhalable dust)
TWA(8 hours):	0.2 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)(as mineral oil, inhalable dust)
TWA(8 hours):	0.2 mg/m3	DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)(as mineral oil, inhalable dust)
TWA(8 hours):	0.2 mg/m3	DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)(as mineral oil, inhalable dust)
TWA(8 hours):	2 mg/m3	ZINC OXIDE(as respirable fume)
TWA(15 minutes):	10 mg/m3	ZINC OXIDE(as respirable fume)

C=Ceiling; S=Skin

Remarks exposure limits :
none

Odour threshold (20°C; 1013 mbar) :
not traceable

DNEL (Derived No Effect Level)
not traceable

PNEC (Predicted No Effect Concentration)
not traceable

Advised personal protection :

Hands	:	polyvinyl alcohol gloves
Eyes	:	safety goggles
Inhalation	:	none (when sufficient exhausting)
Skin	:	none (when used normally)

9. Physical and chemical properties

Physical state	:	paste
Colour	:	white
Odour	:	almost odourless
Vapor rate/range	:	not traceable
Boiling point/range	:	not traceable
Melting point/range	:	not traceable
Flash point/range	:	≥100 °C
Explosive limits	:	not traceable
Dust explosions possible in air	:	not applicable
Relative density	:	1.14000 (water=1) (20 °C)
Vapour pressure	:	not traceable
Solubility in water	:	none
Solubility in fat	:	not traceable
pH	:	not applicable
Viscosity	:	not traceable
Autoignition temperature	:	not traceable
Decomposition temperature	:	>150 °C
* Electrostatic chargement	:	no

10. Stability and reactivity

Conditions to avoid	:	none
Reactions with water	:	no
Hazardous reactions with	:	oxidizing substances
Hazardous decomposition products at heating	:	formaldehyde

11. Toxicological information

Symptoms

Skin	local	:	With intensive skin contact risk of skin affection.
	general	:	No absorption worth mentioning under normal working conditions.
Ingestion	local	:	No symptoms under normal working conditions.
	general	:	The substance may be absorbed after ingestion.
		:	No absorption worth mentioning under normal working conditions.
Inhalation	local	:	The vapour and the fumes are prickling: coughing.
	general	:	No absorption worth mentioning under normal working conditions.
Eyes	local	:	The substance is prickling: redness.
Remarks symptoms		:	None

Toxicity :

LD-50: >2 g/kg (ORL-RAT), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)	Source	:	CONCAWE
LD-50: >2 g/kg (SKN-RBT), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)	Source	:	CONCAWE

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LD-50: >2 g/kg (ORL-RAT), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	Source	: CONCAWE
LD-50: >2 g/kg (SKN-RBT), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	Source	: CONCAWE
LD-50: >2 g/kg (ORL-RAT), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LD-50: >2 g/kg (SKN-RBT), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LD-50: >2 g/kg (ORL-RAT), DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LD-50: >2 g/kg (SKN-RBT), DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LD-50: >2.0 g/kg (ORL-RAT), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LD-50: >2.0 g/kg (SKN-RBT), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LD-50: >5 g/kg (ORL-RAT), ZINC OXIDE	Source	: ChemDat (Merck)

Ames test : not traceable

12. Ecotoxicological information

Biological oxygen demand (5)	: not traceable	
Chemical oxygen demand	: not traceable	
Biological/chemical oxygen demand ratio	: not traceable	
Degradability	: degradable DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	Source : CONCAWE
	: degradable DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	Source : CONCAWE
	: degradable DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	Source : CONCAWE
Biochemical factor	: not traceable	
Log Po/w	: ≥3.9 - ≤6 DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)	Source : CONCAWE
	: ≥3.9 - ≤6 DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	Source : CONCAWE
	: ≥3.9 - ≤6 DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)	Source : CONCAWE
	: ≥3.9 - ≤6 DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	Source : CONCAWE
	: ≥3.9 - ≤6 DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	Source : IUCLID
Henry Constant	: not traceable	
Ecotoxicity :		
LC-50: >1000 mg/l/96H (Fish), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)	Source	: CONCAWE
EC-50: >1000 mg/l/48H (Daphnia), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)	Source	: CONCAWE
IC-50: >1000 mg/l/72H (Algae), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY NAPHTHENIC (DMSO <3%)	Source	: CONCAWE
LC-50: >5000 mg/l/96H (Fish), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	Method	: OECD 203
EC-50: >1000 mg/l/48H (Daphnia), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	Source	: IUCLID
IC-50: >1000 mg/l/72H (Algae), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY NAPHTHENIC (DMSO <3%)	Source	: CONCAWE
LC-50: >5000 mg/l/96H (Fish), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)	Method	: OECD 203
EC-50: >1000 mg/l/48H (Daphnia), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)	Source	: IUCLID
IC-50: >1000 mg/l/72H (Algae), DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LC-50: >1000 mg/l/96H (Fish), DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
EC-50: >1000 mg/l/48H (Daphnia), DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
IC-50: >1000 mg/l/72H (Algae), DISTILLATES (PETROLEUM), SOLVENT-DEWAXED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LC-50: >1000 mg/l/96H (Fish), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
EC-50: >1000 mg/l/48H (Daphnia), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
IC-50: >1000 mg/l/72H (Algae), DISTILLATES (PETROLEUM), SOLVENT-REFINED HEAVY PARAFFINIC (DMSO <3%)	Source	: CONCAWE
LC-50: 2246 mg/l/96H (Fish), ZINC OXIDE	Source	: Easi View
Remarks on ecotoxicity	: none	

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13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation.

14. Transport information

Not subject to Transport-regulation Dangerous Substances

15. Regulatory information

Hazard symbol

none

* R-phrases

52/53

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

* S-phrases

61

Avoid release to the environment. Refer to special instructions/Safety data sheets.

Hazardous component(s)

: not applicable

Remarks on EC-labeling

: The supplier may give a different EC-label (Userlabel).

16. Other information

Remarks on MSDS

: The component(s), as mentioned in section 3, are registered in the Toxic Substances Control Act Inventory (USA).

Overview relevant R-sentences from all components in section 3 :

22

Harmful if swallowed.

34

Causes burns.

50/53

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

65

Harmful: may cause lung damage if swallowed.

Date last update

: 2004-12-23

* Point to alterations with regard to the previous version.

The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

WORKPLACE INSTRUCTION CARD (14960)

Date last update:2004-12-23

Date of request:2007-09-27

IDENTIFICATION

Product code 12nc : 1303 500 42001
Supplier : DOW CORNING
Tradename : MOLYKOTE DX
General description : LUBRICATING PASTE
Appearance : paste - white - almost odourless

USAGELABEL (The supplier may give a different EC-label (Userlabel).)

* **R-phrases** : Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
 * **S-phrases** : Avoid release to the environment. Refer to special instructions/Safety data sheets.
Hazardous components : not applicable

FIRST AID

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
Inhalation : Not applicable.
Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.

PRECAUTIONARY MEASURES



polyvinyl alcohol gloves



safety goggles

Skin : none (when used normally)
Local exhausting : Under normal circumstances not applicable.
Spillage procedure : Dependent on quantity spilt paste, one has the choice between: - remove with cleaning rag or paper, or - cover paste with Powersorb, sand, diatomite, vermiculite and suchlike. Shovel the material into plastic bag or other suitable packaging and remove to the central depot for hazardous waste.
Emergency procedure : not applicable
Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray
Unsuitable fire-extinguisher : not traceable
Reaction with water : no

* Point to alterations with regard to the previous version.

The information provided in this Instructioncard is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

**PHILIPS****MATERIAL SAFETY DATA SHEET**

According EC 1907/2006 (REACH)

1. Identification of the substance/preparation

MSDS : 24515
Product code 12nc : 1322 534 33801
Supplier : RHENUS LUB GMBH & CO KG
 Erkelenzer Str. 36
 D-41179 Mönchengladbach
 Germany
 TEL: + 49(0)2161-5869-0
 FAX: + 49(0)2161-5869-93

Tradename : RHENUS NORLITH STM 2
General description : BALL BEARING GREASE
Use : Various
Publicationdate : 2008-01-15
General information : dangerous.goods@philips.com
Emergency phonenumber : +31 (0)497-598315

2. Hazard identification**3. Composition/information on ingredients**

Component	CAS-no	EC-no	Catalogue-no	Percentage(%)	EC-label
MINERAL OIL					
LITHIUM SOAP					
ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-	4259-15-8	224-235-5		<2.5	N;R: 51/53

4. First-aid measures

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
Inhalation : Not applicable.
Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.
Remarks first aid : none

5. Fire fighting measures

Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray
Unsuitable fire-extinguisher : not traceable
Special fire-fighting equipment : In the event of fire, wear protective clothing and use breathing apparatus that is independent of the ambient air.
Hazardous decomposition products in fire : carbon monoxide, zinc oxide, sulphur oxides, phosphorus oxide, lithium oxide

6. Accidental release measures

Spillage procedure : Dependent on quantity spilt paste, one has the choice between: - remove with cleaning rag or paper, or - cover paste with Powersorb, sand, diatomite, vermiculite and suchlike. Shovel the material into plastic bag or other suitable packaging and remove to the central depot for hazardous waste.
Emergency procedure : not applicable

7. Handling and storage

Local exhausting : Under normal circumstances not applicable.
Storage conditions : Store product protected from the sun, frost free.
Storage code (on behalf of PGS 15) : none

8. Exposure controls/personal protection

Exposure limits :
applicable to: The Netherlands (20 °C; 1013 mbar)
 TWA(8 hours): 5 mg/m3 MINERAL OIL(as oil aerosol) (Statutory threshold limit value)
 No TWA has been laid down. LITHIUM SOAP
 No TWA has been laid down. ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-

applicable to: Belgium (20 °C; 1013 mbar)
 TWA(8 hours): 5 mg/m3 MINERAL OIL(as oil aerosol)

Date of request : 2008-08-18

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TWA(15 minutes): 10 mg/m3 MINERAL OIL(as oil aerosol)

applicable to: Germany (20 °C; 1013 mbar)
TWA(8 hours): 200 mg/m3 MINERAL OIL(carbonhydrogen mix, group 4)

applicable to: United States of America (25 °C; 1013 mbar)
TWA(8 hours): 0.2 mg/m3 MINERAL OIL(as mineral oil, inhalable dust)

C=Ceiling; S=Skin

Remarks exposure limits :

none

Odour threshold (20°C; 1013 mbar) :

not traceable

DNEL (Derived No Effect Level)

not traceable

PNEC (Predicted No Effect Concentration)

not traceable

Advised personal protection :

Hands : polyvinyl alcohol gloves
Eyes : safety goggles
Inhalation : none (when sufficient exhausting)
Skin : none (when used normally)

9. Physical and chemical properties

Physical state : paste
Colour : brown
Odour : specific
Vapor rate/range : not traceable
Boiling point/range : not traceable
Melting point/range : >180 °C
Flash point/range : >200 °C
Explosive limits : not traceable
Dust explosions possible in air : not applicable
Relative density : ≥0.88 - ≤0.92 (water=1) (20 °C)
Vapour pressure : not traceable
Solubility in water : none
Solubility in fat : not traceable
pH : not applicable
Viscosity : not traceable
Autoignition temperature : not traceable
Decomposition temperature : not traceable
Electrostatic chargement : no

10. Stability and reactivity

Conditions to avoid : none
Reactions with water : no
Hazardous reactions with : oxidizing substances
Hazardous decomposition products at heating : none

11. Toxicological information

Symptoms

Skin local : The substance is prickling: redness.
general : Probably no absorption worth mentioning.
Ingestion local : The substance is prickling: sore throat.
general : Probably no absorption worth mentioning.
Inhalation local : The substance is with atomising prickling: sore throat.
general : Probably no absorption worth mentioning.
Eyes local : The substance is prickling: redness.
Remarks symptoms : None

Toxicity :

LD-50: 3.1 g/kg (ORL-RAT), ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-

Method : OECD 401

Source : IUCLID

LD-50: >5.0 g/kg (SKN-RBT), ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-

Method : OECD 402

Source : IUCLID

Ames test : negative ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-

Source : Supplier

12. Ecotoxicological information

Biological oxygen demand (5) : not traceable
Chemical oxygen demand : not traceable
Biological/chemical oxygen demand ratio : not traceable

Date of request : 2008-08-18

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Degradability	: degradable ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-	Source	: Supplier
Biochemical factor	: not traceable		
Log Po/w	: 2.86 ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-	Source	: IUCLID
Henry Constant	: 0.0111 atm m3/mol ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-	Source	: Easi View

Ecotoxicity :

LC-50: >1 - ≤5 mg/l/96H (Fish), ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-

EC-50: >1 - ≤1.5 mg/l/48H (Daphnia), ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-

IC-50: >1 - ≤5 mg/l/96H (Algae), ETHYLHEXYL ZINC DITHIOPHOSPHATE, 2-

Method : OECD 203

Source : IUCLID

Method : OECD 202

Source : IUCLID

Method : OECD 201

Source : IUCLID

Remarks on ecotoxicity : none

13. Disposal considerations

Remainder material or uncleaned empty packagings have to be incinerated in a proper installation or dumped on an approved landfill, in accordance with local and national legislation.

14. Transport information

Not subject to Transport-regulation Dangerous Substances

15. Regulatory information

EC-Label : not applicable

Remarks on EC-labeling : none

16. Other information

Remarks on MSDS : none

Overview relevant R-sentences from all components in section 3 :

51/53 Toxic to the aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Date last update : 2008-01-15

* Point to alterations with regard to the previous version.

The information provided in this Material Safety Data Sheet is correct to the best of the knowledge, information and belief of Philips Electronics Nederland B.V. at the date of its printing.

WORKPLACE INSTRUCTION CARD (24515)

Date last update:2008-01-15
Date of request:2008-08-18

IDENTIFICATION

Product code 12nc : 1322 534 33801
Supplier : RHENUS LUB GMBH & CO KG
Tradename : RHENUS NORLITH STM 2
General description : BALL BEARING GREASE
Appearance : paste - brown - specific

USAGELABEL

not applicable

FIRST AID

Skin : Remove residue substance as soon as possible from the skin (f.i. rinse with much water).
Ingestion : Let drink 1 or 2 glasses of water. In case of general disorders call for a doctor.
Inhalation : Not applicable.
Eyes : Rinse for a long time with much water. In case of eye-sight disturbances consult a doctor.

PRECAUTIONARY MEASURES



polyvinyl alcohol gloves



safety goggles

Skin : none (when used normally)
Local exhausting : Under normal circumstances not applicable.
Spillage procedure : Dependent on quantity spilt paste, one has the choice between: - remove with cleaning rag or paper, or - cover paste with Powersorb, sand, diatomite, vermiculite and suchlike. Shovel the material into plastic bag or other suitable packaging and remove to the central depot for hazardous waste.
Emergency procedure : not applicable
Fire-extinguisher : carbon dioxide, extinguishing powder, foam, water spray
Unsuitable fire-extinguisher : not traceable
Reaction with water : no

* Point to alterations with regard to the previous version.

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